



**PHASE II ENVIRONMENTAL SITE ASSESSMENT
GLOBE BUILDING
1801 ATWATER STREET
DETROIT, MICHIGAN**

prepared for

**DETROIT/WAYNE COUNTY PORT AUTHORITY
8109 EAST JEFFERSON AVENUE
DETROIT, MICHIGAN 48214**

and

**URBAN DEVELOPMENT CO., LLC
407 E. FORT STREET
DETROIT, MICHIGAN 48226**

**AKT Peerless Project No. 5134d-4-20 and 5134d2-2-20
December 6, 2007**

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PHASE II ENVIRONMENTAL SITE ASSESSMENT
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1.0 INTRODUCTION

Urban Development Co., LLC (the Developer) and the Detroit/Wayne County Port Authority (DWCPA) retained AKT Peerless Environmental Services (AKT Peerless) to conduct a Phase II Environmental Site Assessment (Phase II ESA) of a property located at 1801 Atwater Street in Detroit, Michigan (subject property). This report was completed on behalf of DWCPA and the Developer. AKT Peerless and the DWCPA understand that the Developer plans to purchase the property, and construct a mixed-use residential and commercial structure.

This Phase II ESA was conducted in accordance with AKT Peerless' Proposal for a Phase II ESA (Proposal Number PD-8397-1), dated November 27, 2007 and American Society for Testing and Materials (ASTM) Designation E 1903-97 "*Standard Guide for Environmental Site Assessments: Phase II Environmental Site Assessment Process*".

The scope of the Phase II ESA was based on:

- City of Detroit – Waterfront Reclamation and Casino Development Project (WRCDP) Phase I Inquiry Report Summary, prepared in February 1999 by Roy F. Weston Inc. (Weston) on behalf of the City of Detroit Planning and Development Department.
- City of Detroit – Waterfront Reclamation and Casino Development Project Phase II Inquiry Report Summary, prepared on March 25, 1999 by Weston on behalf of the City of Detroit Planning and Development Department.
- Baseline Environmental Assessment, prepared on June 15, 2001 by Weston on behalf of the City of Detroit.
- Dry Dock Engine Works Article prepared in August 2002 by the Historic American Engineering Record (HAER).
- Brownfield Redevelopment Assessment Report, prepared on September 28, 2004 by Michigan Department of Environmental Quality (MDEQ) on behalf of the United States Environmental Protection Agency (US EPA).
- Building Survey Report, prepared on December 2, 2004 by Enviro Matrix on behalf of the Economic Development Corporation of the City of Detroit.
- Health Consultation Globe Building Brownfield Redevelopment Assessment (Health Consultation), prepared in March 2005 by the Michigan Department of Community Health Under a Cooperative Agreement with Agency for Toxic Substances and Disease Registry;
- Phase I Environmental Site Assessment, prepared in July 2007 by AKT Peerless on behalf of

the Detroit/Wayne County Port Authority (DWCPA) and Urban Development Co., LLC.;
USEPA Work Plan, prepared in October 2007 by AKT Peerless on behalf of DWCPA.

This documents the field activities, sampling protocols, and laboratory analytical results associated with AKT Peerless' Phase II ESA. AKT Peerless' Phase II ESA was performed for the benefit of DWCPA, Urban Development Co., LLC, and for future financing entities. AKT Peerless asserts that these parties may rely on the contents and conclusions of this report.

2.0 BACKGROUND

2.1 SITE DESCRIPTION AND PHYSICAL SETTING

The subject property is located at 1801-03 East Atwater Street in the City of Detroit, Wayne County, Michigan. The subject property is situated on the northeastern corner of East Atwater and Orleans Streets. It consists of a generally, rectangular -shaped parcel that contains approximately 1.09-acres and a portion vacated Guoin Street (between Orleans and Dequindre Streets). The Economic Development Corporation of the City of Detroit is the current owner of the subject property. The subject property's parcel identification number is 07/000011. The subject building is currently not occupied by any formal tenant.

The subject property is currently developed with an 80,000 square foot vacant, former manufacturing/industrial building, and is located in an area of Detroit that is characterized by vacant, commercial, and/or light industrial properties and riverfront development.

Refer to Figure 1 for a topographic site location map. See Figure 2 for a site map.

2.2 SUBJECT PROPERTY HISTORY AND LAND USE

The subject property is not currently used for any significant or obvious purpose.

According to the HAER Article the Dry Dock Engine Works produced marine steam engines on the subject property as early as 1867. The manufacturing and repairing of marine steam engines and boilers continued to occur at the subject property until the mid-1920s. In the mid 1930s, Detroit Edison purchased the subject property. Between 1929 and 1941 Electromaster, Inc. a stove manufacturer occupied the subject property. From at least 1948 until 1963, Detroit Edison Co. owned and operated a warehouse and reconditioning and appliance shop at the subject property. In 1981, Detroit Edison Co. sold the subject property to the Globe Trading Company. The Globe Trading Co. used the subject property for a warehouse until at least 1997. Currently the subject property consists of a vacant industrial/manufacturing building and a portion of vacated Guoin Street. The subject property is currently owned by the Economic Development Corporation of the City of Detroit.

2.3 ADJACENT PROPERTY LAND USE

The following table describes the current uses of the adjoining properties, identified occupants, and noteworthy observations of environmental concern, if any, that were noted during AKT Peerless' recent reconnaissance of the subject property.

Direction	Address	Current Use / Occupant	Potential Concerns
north	Not applicable	Vacant lot / none	none observed
east	Not applicable	Vacant lot / none	Evidence of land disturbance
south	Not applicable	Tricentennial State Park	none observed
west	Not applicable	Vacant lot / none	none observed

2.4 PREVIOUS ENVIRONMENTAL INVESTIGATIONS

2.4.1 Clayton February 1998 Baseline Environmental Assessment

On February 3, 1998, Clayton prepared a Category A Baseline Environmental Assessment (BEA) on behalf of Globe Associates, LLC. Clayton's BEA was prepared for a larger property that included the subject property and the eastern adjoining property. Clayton prepared the BEA with the understanding that the intended use of the property was commercial and office purposes that would not include the storage and use of any hazardous substances. The BEA was reviewed and affirmed by MDEQ on February 24, 1999.

The BEA included a Phase I ESA, Phase II Subsurface Investigation, and Asbestos and Lead-Based Paint Assessment. The following subsections provide a summary of those documents:

Clayton October 1997 Phase I ESA

On October 21, 1997, Clayton conducted a Phase I ESA on behalf of The Sterling Group. Clayton's ESA was prepared for a larger property that included the subject property and the eastern adjoining property. The purpose of Clayton's Phase I ESA was to provide and independent, professional opinion regarding recognized environmental conditions, if any associated with the property. Clayton identified the following environmental concerns associated with the property.

- the historical use of the subject buildings as foundry, machine shop, and oil reclamation facility since at least 1884
- the historical presence of USTs and a crude oil pipeline located on the property
- the suspected presence of asbestos-containing building material and lead-based paint

Clayton February 1998 Phase II Subsurface Investigation

In February 1998, Clayton completed a Phase II Subsurface Investigation on behalf of Globe Associates, LLC. Clayton's Phase II ESA was prepared for a larger property that included the subject property and the eastern adjoining property. The purpose of this investigation was to evaluate the possible presence of contamination associated with (1) the historical use of the subject building as a foundry, machine shop, and oil reclamation facility, and (2) the historical presence of underground storage tanks (USTs) and a crude oil pipeline located on the property.

During the investigation, Clayton (1) drilled 14 soil borings (SB-1, SB-3 through SB-15), (2) collected 15 soil samples, (3) collected 9 groundwater samples, and (4) submitted samples for laboratory analyses. It is important to note that only SB-1 (and possibly SB-3 and SB-4) was drilled on the subject property. The remaining soil borings were drilled on what is considered by this Phase I ESA as the eastern adjoining property.

Samples were submitted for laboratory analyses of select parameters that included volatile organic compounds (VOCs), polynuclear aromatic hydrocarbons (PNAs), and Michigan metals (arsenic, barium, cadmium, chromium, copper, lead, mercury, selenium, silver, and zinc).

The laboratory analytical results indicated that concentrations of VOCs [including 1,2-dichlorobenzene, trichloroethene, 1,1-dichloroethene, vinyl chloride, chlorobenzene], PNAs [including acenaphthene, benzo(b)fluoranthene, indeno(1,2,3-cd)pyrene, benzo(a)pyrene, naphthalene, chrysene, and benzo(a)anthracene], and metals were detected at the subject property above MDEQ Generic Residential Cleanup Criteria. In general, the significant contamination encountered during the investigation was found in soil borings SB-14 and SB-15 drilled near the former fuel oil USTs near the former powerhouse. Clayton concluded that the subject property meets the definition of a "facility".

Clayton December 1997 Assessment of Suspect Asbestos-Containing Materials and Suspect Lead-Based Paint-Containing Materials

On December 29, 1997, Clayton completed an asbestos and lead-based paint assessment of buildings on the property on behalf of The Sterling Group. The purpose of Clayton's assessment was to identify asbestos-containing material (ACM) and lead-based paint throughout the facility (with the exception of roofing materials). During the assessment, Clayton (1) conducted an inspection of the facility, (2) collected samples of 38 building materials, (3) analyzed 65 painted surfaces with an XRF Spectrum Instrument, and (4) submitted samples for laboratory analysis of asbestos.

The laboratory results indicated the presence of ACM in the warehouse building, storage building, and shop. These materials included (1) floor tile, (2) thermal pipe insulation, and (3) tank insulation. The lead-based paint survey indicated the presence of lead at concentrations ranging from 0 to 5.09 milligrams.

2.4.2 Weston June 2001 Baseline Environmental Assessment

On June 15, 2001, Weston prepared a Category N Baseline Environmental Assessment (BEA) of the Waterfront Reclamation and Casino Development Project (WRCDP) on behalf of the City of Detroit. Weston's BEA was prepared for a larger property that included the subject property and the eastern adjoining property. Weston prepared the BEA with the understanding that the City of Detroit's intended use of the subject property would not include the storage and use of any hazardous substances.

The BEA included Weston's Phase I ESA, Phase II ESA, and a letter from the City of Detroit requesting an extension of time to empty potential USTs at the subject property. The BEA was prepared as a disclosure to the MDEQ. However, the disclosure forms in AKT Peerless' copy are not signed, and the BEA is not listed as received on the MDEQ BEA database. Therefore, it does not appear that the document was submitted to the MDEQ.

The BEA included, as attachments, a Phase I ESA and Phase II Subsurface Investigation. The following subsections provide a summary of those documents:

Phase I ESA

On February 18, 1999, Roy F. Weston, Inc. (Weston) conducted a Phase I Environmental Inquiry of the WRCDP on behalf of the City of Detroit Planning and Development Department. The purpose of Weston's Phase I Environmental Inquiry was to identify actual and potential environmental liabilities associated with the historical use and present physical condition of several parcels near the East Riverfront, and determine the past and present operations of these parcels. The investigation area included 107 parcels and adjacent rights-of-way – part of which included the subject property. During the Phase I ESA, Weston identified the following environmental concerns associated with the subject property.

- Fill/vent pipe located in southeastern corner of building;
- 200-gallon AST located in the east-central portion of the building;
- Oil staining on concrete and wood floors of the building;
- Staining around the railroad tracks inside the building;
- Fuel gauge for a 20,000-gallon UST in dock area on east side of building;
- Two fuel islands in the southeastern portion of the property;
- Two-20,000-gallon gasoline USTs, installed in 1948 and removed in 1990;
- One-20,000-gallon gasoline UST installed 1948, no record of removal;
- Eight propane ASTs, installed 1978, no record of removal; and,
- One-20,000-gallon fuel oil UST installed in 1953, no record of removal.
- Potential contamination associated with the historical use of the property (e.g., machine shop, forge shop, foundry, engine works, blacksmith, oil house, etc.)

- Potential lagoons near the northwestern corner of Atwater and Orleans Streets
- Potential asbestos-containing material

Weston March 1999 Phase II Inquiry Report Summary

In March 1999, Weston completed a Phase II Environmental Inquiry of the WRCDP on behalf of the City of Detroit Planning and Development Department. The purpose of this inquiry was to provide the information necessary to evaluate remedial actions appropriate for the intended land use, and to obtain information necessary to complete an Administrative Agreement and Covenant Not to Sue with the State of Michigan. The investigation area included 107 parcels and adjacent rights-of-way – part of which included the subject property. Weston’s investigation included (1) review of existing environmental reports, (2) geophysical survey of select parcels, (3) collecting surface samples from select parcels, (4) an evaluation of abandoned containers, and (5) drilling soil borings.

Weston conducted assessment activities on the subject property. During the investigation, Weston (1) reviewed existing environmental reports, (2) evaluated abandoned containers, and (3) collected a liquid sample from pipes located on the former dispenser island outside eastern wall. The sample was submitted for laboratory analyses of select parameters including VOCs and semi-volatile organic compounds (SVOCs).

Weston compared the analytical results from the BEA prepared by Clayton Environmental Consultants in February 1998 to the current MDEQ GRCC to determine if the subject property meets the definition of a “facility”. Weston concluded that the property meets the definition of a “facility” based on benzo(a)pyrene concentrations detected in soil at the subject property above MDEQ Residential Direct Contact Criteria.

Weston identified a 200-gallon abandoned AST in the subject property building. The AST appeared to be connected to the buildings heating system and was assumed to contain fuel oil.

The analytical results indicated that the liquid sample taken from the dispenser pipes contained benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(g,h,i)perylene, chrysene, bis(2-ethylhexyl)phthalate, fluoranthene, indeno(1,2,3-c,d)pyrene, 2-methylanaphthalene, naphthalene, phenanthrene, and pyrene.

2.4.3 Historic American Engineering Record

In August 2002, Mr. Thomas A. Klug completed a Historic American Engineering Record (HAER) of the Dry Dock Engine Works (portion of which operated on the subject property) on behalf of the City of Detroit. HAER is a program within the National Park Service, US Department of Interior. The purpose of the HAER was to document and interpret the historical significance of the subject property.

2.4.4 MDEQ September 2004 Brownfield Redevelopment Assessment

On September 28, 2004, MDEQ completed a Brownfield Redevelopment Assessment (BFRA) of the subject property on behalf of the USEPA. At the time of the reconnaissance, the subject property consisted of a large three-story building with paved drive/parking area on its northeast side. The purpose of MDEQ's BFRA reconnaissance was to gather information to be used in development of the BFRA sampling plan, to determine appropriate health and safety requirements, and to determine potential sampling locations. MDEQ identified the following concerns:

- pump island located in the southern portion of the drive/parking area;
- abandoned railroad spur located in the drive/parking area;
- debris piles located throughout the property;
- 20 pound propane tank located in alley next to building; and,
- 200-gallon AST and various debris in northeast end of building; large electrical bank with most of the wiring and equipment removed located in southwest bay area; and,
- several small workshop areas in central portion of the building.

It should be noted that MDEQ did not access the upper portions of the building due to risk of injury or potential structural damage.

In addition, in April and May 1990, MDEQ completed a subsurface investigation of the subject property on the behalf of the USEPA. The purpose of this investigation was to (1) determine the levels of EPA Target Compound List Compounds and Target Analyte List analytes which may be present at the subject property, (2) characterize potential contamination in shallow and subsurface soil, (3) ascertain potential contamination migration from possible source areas, and (4) evaluate health and safety concerns.

During the investigation, MDEQ (1) drilled eight soil borings (SB-1 through SB-8), (2) collected 16 soil samples, and (3) submitted samples for laboratory analyses. The soil samples were submitted for laboratory analyses of VOCs, SVOCs, PCBs, and metals.

Analytical results indicated that target parameters were detected at concentrations above MDEQ GRCC. Parameters that exceeded criteria included cis-1,2-dichloroethylene, 1,3,5-trimethylbenzene, vinyl chloride, xylenes, acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, carbazole, dibenzo(a,h)anthracene, dibenzofuran, fluoranthene, fluorine, 2-methylnaphthalene, naphthalene, phenanthrene, pyrene, PCBs, aluminum, arsenic, barium, cadmium, chromium, cobalt, silver, strontium, and zinc.

In addition, MDEQ collected five samples of various insulating wrap, floor, and ceiling tiles and tested them for ACM. Results indicated that all insulating wrap and the floor tile contained asbestos above regulatory levels. Since not all areas of the building were accessed, MDEQ recommended that a thorough asbestos inspection be conducted to identify all ACM in the building.

MDEQ concluded that the subject property meets the definition of a “facility”, and recommended the following:

- soil contaminated with compounds at levels that exceed direct contact criteria be removed, remediated, and/or encapsulated to prevent exposure;
- a determination of local background concentrations for inorganic compounds may be useful in screening out some criteria exceedances found;
- a determination should be made of whether a local ordinance exists that prohibits the use of groundwater at the subject property for drinking water purposes;
- all regulated ACM should either be removed from the building or be encapsulated during any revitalization or demolition of the building;
- the physical hazards on the property should be remedied before or during redevelopment; and,
- contamination should be considered with respect to responsibilities that may exist under Part 201.

2.4.5 Enviro Matrix December 2004 Building Survey

On December 2, 2004, Enviro Matrix completed a Building Survey on behalf of the Economic Development Corporation of the City of Detroit. At the time of this survey, the subject property consisted of a large abandoned warehouse building. During the investigation, Enviro Matrix completed an asbestos-containing material (ACM) survey, a limited lead-based paint survey, and a hazardous and non-hazardous material survey. Results of Enviro Matrix surveys indicated that asbestos was found in floor tiles and insulation. Lead-based paint was also detected on the painted surfaces inside the subject building. In addition, miscellaneous non-hazardous products were identified inside the subject building.

Enviro Matrix recommended that ACM material be removed in accordance with the current Asbestos National Emission Standards for Hazardous Air Pollutants requirements. Enviro Matrix also recommends lead monitoring and awareness training be conducted during future development.

2.4.6 Michigan Department of Community Health March 2005 Health Consultation

In April 2004, the Michigan Department of Community Health (MDCH) completed a Health Consultation of the subject property under a Cooperative Agreement with the Agency for Toxic Substances and Disease Registry (ATSDR). The purpose of MDCH’s Health Consultation was to evaluate the health risks associated with the Globe Building. MDCH evaluated exposure scenarios that would protect for all potential future uses including using the property for residential purposes. During this consultation MDCH (1) compared soil analytical results to relevant direct contact and inhalation criteria and (2) compared the maximum soil concentration of each chemical detected to existing acute, intermediate, and chronic environmental soil concentration guidelines (ASTDR) for both cancer and non-cancer ending points. The comparison indicated that several organic and inorganic compounds were found at concentrations

that exceed ASTDR values. In addition, MDCH identified ACM material within the subject building.

MDCH concluded that for present exposure pathways the subject building presents no apparent public health hazard due to the short duration of potential exposures. For future exposure pathways MDCH concludes that the property represents an indeterminate public health hazard, because (1) the final uses of the property was not determined and land use will influence the exposure pathways, (2) soil sampling methodology was not designed to properly characterize the extent of the contamination, (3) two 20,000-gallon USTs have not been accounted for on the property, and (4) surrounding properties may be contributing contaminations to the vapor inhalation pathway. MDCH recommends the following:

Remove ACM according to the NESHAP guidelines;
Determine if the two unaccounted for 20,000-gallon USTs remain at the property;
Take actions that will prevent exposure during or after redevelopment, as discussed in MDEQ “Due Care” regulations; and, Conduct additional site characterization.

2.4.7 AKT Peerless’ July 2007 Phase I ESA

On July 31, 2007, AKT Peerless completed a Phase I ESA on behalf of the DWCPA and Urban Development Co., LLC. The purpose of AKT Peerless’ Phase I ESA was to evaluate the current and historical conditions of the subject property in an effort to identify *recognized environmental conditions* (RECs)¹ and *historical recognized environmental conditions* (HRECs)² in connection with the subject property. AKT Peerless identified the following environmental concerns associated with the property:

1. The subject property consisted of a manufacturing facility from at least 1867 until 1981. The subject property was used as a warehouse facility from 1981 until 1997. Previously conducted investigations of the property indicated that VOCs, PNAs, and metals were detected in soil and groundwater beneath the subject property, and that the property meets the definition of a “facility” as defined in Part 201. In addition, the subject property was identified on the “open,” leaking underground storage tank (LUST) site database. It is AKT Peerless’ opinion that a potential exists for the subject property’s soil and groundwater to have been adversely affected by the historical use of the subject property.
2. The following USTs were located on the subject property:

¹ ASTM’s Standard Practice E 1527-05 defines the term recognized environmental condition (REC) as the presence or likely presence of any hazardous substance or petroleum product on a property under conditions that indicate (1) an existing release, (2) a past release, or (3) a material threat of a release of a hazardous substance or petroleum product into structures on the subject property or into the ground, groundwater, or surface water of the subject property.

² ASTM defines the term historical recognized environmental condition (HREC) as an environmental condition which in the past would have been considered an REC, but which may or may not be considered an REC currently. Neither HRECs nor RECs are intended to include *de minimis* conditions that generally do not present a material risk of harm to public health or the environment and would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.

Underground Storage Tanks				
Installation Date	Tank Contents	Tank Capacity	Removal Date	Tank Status
1948	Gasoline	20,000 gallons	Unknown	Unknown
February 1949	Gasoline	20,000 gallons	June 1990	Removed
February 1949	Gasoline	20,000 gallons	June 1990	Removed
1953	Fuel Oil	20,000 gallons	Unknown	Unknown

AKT Peerless also observed two former dispenser islands located near the southeast portion of the subject property. On February 9, 1998, a confirmed release was reported by MDEQ based on review of a BEA submitted for the subject property. According to previous environmental reports pipes located on these former dispenser islands were sampled and results indicated that the liquid contained benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(g,h,i)perylene, chrysene, bis(2-ethylhexyl)phthalate, fluoranthene, indeno(1,2,3-c,d)pyrene, 2-methylanaphthalene, naphthalene, phenanthrene, and pyrene.

Historical records indicate that at least four USTs have been located on the subject property. Only two of these USTs have removal records. Therefore, the potential exists for abandoned USTs to remain buried at the subject property.

3. AKT Peerless observed stained concrete through out the subject building. The stains ranged in size from small to large. These stains were located through out the building and in some cases; they were present on corroded concrete or along engineered floor seams. These stains were most likely caused from the various manufacturing activities that took place in the subject property. It is AKT Peerless' opinion that a potential exists for the subject property's soil and groundwater to have been adversely affected by the releases that caused the referenced stains.
4. Six plastic containers with approximately 30-gallons of a brown liquid were located in the center of the subject building. The contents and use of these containers is unknown. In addition stained concrete was observed around these containers. It is AKT Peerless' opinion that a potential exists for the subject property's soil and groundwater to have been adversely affected by releases from these containers.
5. Railroad tracks were located in vacated Guion Street and along the northern interior portion of the subject building since at least 1884. In addition railroad tracks have been located on the eastern adjoining property since at least 1884. Potential concerns typically associated with railroad tracks include the use of fill materials as ballast to support the ties and rails of the railroad tracks and leaks or spills of hazardous materials or petroleum products.
6. An underground crude oil pipeline was identified beneath the subject property in the Sanborn maps. The pipeline extended north from the southern adjoining property to the center of the subject building near the former iron crusher, and then extends east to the oil reclamation

system and crude oil UST on the eastern adjoining property. Previous investigations indicate concentrations of 1,1-dichloroethene, trichloroethene, and vinyl chloride were detected above MDEQ Residential GSI criteria in groundwater samples collected in this area. It is AKT Peerless' opinion that a potential exists for the subject property's soil and groundwater to have been adversely affected by this pipeline.

7. Detroit Edison used the subject building as a reconditioning and application shop from at least 1955 through the 1960s. A letter to the City of Detroit from Detroit Edison, dated June 1955, stated that Detroit Edison is not required to pay the fire department invoice since they only transport transformer oil with a flash point of 130 degrees centigrade. The letter also describes that Detroit Edison stores a 1,000-gallon, a 1,300-gallon, and two 5,000-gallon tanker trucks within the subject building.
8. AKT Peerless observed fill material on the ground surface of the undeveloped areas. The origin of this material is not known.
9. Potential machine pits were observed in the subject building. One of these pits appeared to be filled in with concrete and the other remained open. It is AKT Peerless' opinion that a potential exists for the subject property's soil and groundwater to have been adversely affected by releases from the activities associated with these pits.
10. A large concrete slab was observed in the eastern interior of the subject building. Due to the construction and size of this slab it appears that the pad was used to store product or waste material. It is AKT Peerless' opinion that the potential exists for the subject property's soil and groundwater to have been adversely affected by releases for the products stored on this slab.
11. A suspicious pipe was observed coming out of the ground near the southeaster portion of the subject property. The former purpose of this pipe is not known. It is AKT Peerless' opinion that the potential exists for the subject property's soil and groundwater to have been adversely affected by releases for this suspicious pipe.
12. Several irregular soil mounds and debris was observed on the northern portion of the subject property. These mounds could indicate possible buried waste or debris.
13. A vent stack was observed on the eastern wall of the subject building. The vent stack contained residual ash and the former use of the stack was not determined. Industrial activities (i.e., sheet metal works, locomotive repair shop, Detroit dry docks, foundry, construction yard, coal yard, machine and forge shops, potential lagoons, and boiler shop) were conducted on the surrounding adjoining properties from at least the late 1800s until as late as the 1980s. In addition, several USTs and a crude oil pipeline were located on the eastern adjoining property.
14. Industrial activities (i.e., sheet metal works, locomotive repair shop, Detroit dry docks, foundry, construction yard, coal yard, machine and forge shops, potential lagoons, and boiler

shop) were conducted on the surrounding adjoining properties from at least the late 1800s until as late as the 1980s. In addition, several USTs and a crude oil pipeline were located on the eastern adjoining property.

2.4.8 Property Boundary Corrections

During Phase II activities Mr. Mark Wilcox of Urban Development Co., LLC contacted AKT Peerless to clarify the subject property boundaries. According to Mr. Wilcox, the property boundaries identified in AKT Peerless' Phase I ESA and the geophysical survey were incorrect. The subject property boundary did not include the forty feet east of the subject building; rather, the eastern property boundary extends along the eastern wall of the subject building. Refer to Figure 2 for a site map with the correct property boundaries.

3.0 PHASE II ENVIRONMENTAL SITE ASSESMENT ACTIVITIES

3.1 SCOPE OF ASSESSMENT

To further evaluate the RECs, AKT Peerless conducted a subsurface investigation of the subject property that included: (1) completing a geophysical survey of select areas of the subject property and eastern adjoining property, (2) drilling 15 soil borings, (3) collecting 30 soil samples and three concrete wipe samples. The following samples were submitted for laboratory analyses:

- soil samples for VOCs, SVOCs, PNAs, Michigan metals, calcium, chloride, and PCBs
- concrete wipe samples for laboratory analysis of PCBs

The following table summarizes each REC, the site investigation activities performed to address each REC, and the laboratory parameters used to address each REC.

Summary of AKT Peerless' Scope of Investigation

REC #	Environmental Concern	Investigation Activity	Analytical Parameters
REC 1	Historical use and "open" LUST	B-1 through B-10	VOCs, SVOCs or PNAs, Michigan Metals, and PCBs. Calcium and Chloride (only in B-9)
REC 2	Former USTs on eastern adjoining property.	B-15	VOCs, SVOCs or PNAs, Michigan Metals, and PCBs.
REC 3	Interior staining	B-1 through B-10 and CW-1 through CW-3	VOCs, SVOCs or PNAs, Michigan Metals, and PCBs. Calcium and Chloride (only in B-9). CW samples submitted for PCBs only
REC 4	Staining and abandoned containers	B-1 through B-10	VOCs, SVOCs or PNAs, Michigan Metals, and PCBs. Calcium and Chloride (only in B-9)

REC #	Environmental Concern	Investigation Activity	Analytical Parameters
REC 5	Former railroad tracks	B-1, B-11 through B-13	VOCs, PNAs, Michigan Metals and PCBs
REC 6	Underground pipeline	B-14	VOCs, PNAs or SVOCs, Michigan Metals, and PCBs
REC 7	Historical use by DTE Energy	B-1 through B-10	VOCs, SVOCs or PNAs, Michigan Metals, and PCBs. Calcium and Chloride (only in B-9)
REC 8	Fill material on unpaved surfaces	B-11 through B-13	VOCs, PNAs, Michigan Metals, and PCBs
REC 9	Potential machine pits	B-1 through B-10	VOCs, SVOCs or PNAs, Michigan Metals, and PCBs. Calcium and Chloride (only in B-9)
REC 10	Former material storage	B-1 through B-10	VOCs, SVOCs or PNAs, Michigan Metals, and PCBs. Calcium and Chloride (only in B-9)
REC 11	Suspicious pipe on eastern adjoining property	REC not evaluated under this scope*	
REC 12	Irregular soil mounds	B-11	VOCs, PNAs, Michigan Metals, and PCBs
REC 13	Vent stack and ash	B-15	VOCs, PNAs, Michigan Metals, and PCBs
REC 14	Adjoining properties	B-1, B-6, B-12, B-13, and B-15	VOCs, PNAs, Michigan Metals, and PCBs

*As noted above the subject property does not extend beyond the eastern wall of the subject building. Therefore, this REC is considered associated with the eastern adjoining property.

3.1.1 Geophysical Survey

AKT Peerless retained Geophysical Imaging, Inc. (GII) to conduct a geophysical survey of the subject property and eastern adjoining property. On November 7, 2007, GII conducted an electromagnetic induction (EM) and ground penetrating radar (GPR) survey, along the 40 feet of property east of the subject building and along the southern sidewalk, to evaluate whether USTs are present beneath the subject property. In addition, GII attempted to conduct an EM and GPR survey along the northern portion of the subject property, however this was not possible due to the presence of densely growing vegetation. The results of the EM survey indicated that the southeastern portion of the eastern adjoining property had a metal anomaly most likely associated with USTs. The EM survey identified a linear EM anomaly located on the central portion of the eastern adjoining property. This anomaly represents a possible crude oil pipeline. In addition, the GPR survey identified a backfilled excavation trench located central portion of the southern sidewalk. According to GII, this backfill excavation trench represents a possible crude oil pipeline. A copy of the geophysical survey report is included as Appendix C.

3.1.2 Soil Evaluation

On November 15, 2007, AKT Peerless drilled 15 soil borings at the subject property. AKT Peerless used hydraulic drive/direct-push (Geoprobe[®]) sampling techniques and followed the drilling procedures outlined in ASTM publication D 6282-98 “*Standard Guide for Direct Push Soil Sampling for Environmental Site Characterizations*”. AKT Peerless collected continuous soil samples from the soil borings in four-foot intervals to the maximum depth explored of 20 feet below ground surface (bgs). AKT Peerless personnel inspected, field-screened, and logged the samples collected at each soil boring location. Refer to Figure 2 for a site map with soil boring locations. Boring logs are provided in Appendix A.

3.1.3 Groundwater Evaluation

AKT Peerless did not encounter groundwater in any of the soil borings drilled at the subject property.

3.1.4 PCB Evaluation

On November 11, 2007, AKT Peerless collected three concrete wipe samples from stained areas within the subject building. The samples were submitted for laboratory analysis of PCBs. Samples were collected in three interior stained areas of the subject building. All concrete wipe samples were non-detect for PCBs. Refer to Figures 2 for a site map with PCB wipe sample locations.

3.2 QUALITY ASSURANCE/QUALITY CONTROL

To ensure the accuracy of data collected during on site activities, AKT Peerless implemented proper quality assurance/quality control (QA/QC) measures. The QA/QC procedures included, but were not limited to, (1) decontamination of sampling equipment before and between sampling events, (2) calibration of field equipment, (3) documentation of field activities, and (4) sample preservation techniques.

3.2.1 Decontamination of Equipment

During sample collection, AKT Peerless adhered to proper decontamination procedures. Sampling equipment was decontaminated using the following methods to minimize potential cross-contamination of soil samples:

- Steam-cleaning or washing and scrubbing the equipment with non-phosphate detergent
- Rinsing the equipment
- Air-drying the equipment

3.2.2 Calibration of Field Equipment

During AKT Peerless’ Phase II ESA, a photoionization detector (PID) was used to screen all soil samples. The PID was maintained in a calibrated condition using 100 ppm isobutylene span gas prior to subsurface investigations.

3.2.3 Documentation of Activities

During AKT Peerless' Phase II ESA activities, subject property conditions (i.e. soil boring locations, weather conditions) were documented. AKT Peerless visually inspected the soil samples and prepared a geologic log for each soil boring. The logs include soil characteristics such as (1) color, (2) composition (e.g., sand, clay, or gravel), (3) soil moisture and water table depth, and (4) signs of possible contamination (i.e., stained or discolored soil, odors). Soil types were classified in accordance with ASTM publication D-2488 "*Unified Soil Classification System*". All soil samples were delivered to a laboratory under chain-of-custody documentation. See Appendix A for AKT Peerless' soil boring logs. See Figure 2 for site map with soil boring locations.

3.2.4 Sample Preservation Techniques

AKT Peerless collected soil samples according to USEPA Publication SW-846, *Testing Methods for Evaluating Solid Waste*. Soil samples were collected in laboratory-supplied containers, stored on ice or at approximately 4 degrees Celsius, and submitted under chain-of-custody documentation.

Soil samples collected for volatile analyses were field preserved with methanol in accordance with U.S. EPA Method 5035. Soil samples collected for semi-volatile organic compounds (SVOCs), polynuclear aromatic hydrocarbons (PNAs), polychlorinated biphenyls (PCBs) and metals analyses were stored in unpreserved, 4-ounce wide-mouth jars.

3.3 LABORATORY ANALYSES AND METHODS

AKT Peerless submitted 30 soil and three wipe samples for laboratory analyses. The following table summarizes the location, depth, matrix, and laboratory analysis for each sample.

Summary of Laboratory Analyses

Sample Name/Depth (in feet)	Matrix	VOCs	PNAs	Michigan Metals	SVOC	Calcium and Chloride	PCBs
B-1 (0.5-1)	S	☑	☑	☑	-	-	☑
B-1 (3-5)	S	☑	☑	-	-	-	-
B-2 (0.5-1)	S	☑	☑	☑	-	-	☑
B-2 (3-5)	S	☑	☑	-	-	-	-
B-3 (3-5)	S	☑	☑	☑	-	-	☑
B-3 (6-8)	S	☑	☑	-	-	-	-
B-4 (0.5-1)	S	☑	☑	☑	-	-	☑
B-4 (3-5)	S	☑	☑	-	-	-	-
B-5 (0.5-1)	S	☑	☑	☑	-	-	☑
B-5 (3-5)	S	☑	☑	-	-	-	-

Sample Name/Depth (in feet)	Matrix	VOCs	PNAs	Michigan Metals	SVOC	Calcium and Chloride	PCBs
B-6 (0.5-1)	S	☑	☑	☑	-	-	☑
B-6 (2-4)	S	☑	☑	-	-	-	-
B-7 (0.5-1)	S	☑	☑	☑	-	-	☑
B-7 (3-5)	S	☑	☑	-	-	-	-
B-8 (4-6)	S	☑	☑	☑	-	-	☑
B-8 (12-14)	S	☑	☑	-	-	-	-
B-9 (1-1.5)	S	☑	-	☑	☑	☑	-
B-9 (12-14)	S	☑	☑	-	-	☑	-
B-10 (1-1.5)	S	☑	☑	☑	-	-	☑
B-11 (0-0.5)	S	☑	☑	☑	-	-	☑
B-11 (1-2)	S	☑	☑	☑	-	-	☑
B-12 (2-4)	S	☑	☑	☑	-	-	☑
B-12 (6-8)	S	☑	☑	-	-	-	-
B-13 (0-0.5)	S	☑	☑	☑	-	-	☑
B-13 (3-5)	S	☑	☑	-	-	-	-
B-14 (0.5-1)	S	☑	☑	☑	-	-	☑
B-14 (3-5)	S	☑	-	☑	☑	-	-
B-14 (6-8)	S	☑	-	☑	☑	-	☑
B-15 (3-5)	S	☑	☑	☑	-	-	☑
B-15 (8-10)	S	☑	☑	-	-	-	-
CW-1 through CW-3	CW	-	-	-	-	-	☑

Note: S = Soil sample and CW = Concrete Wipe Sample

The laboratory analyzed the samples for: (1) VOCs in accordance with USEPA Method 5035/8260; (2) PNAs and SVOCs in accordance with USEPA Method 3550B/8270C; (3) metals in accordance with USEPA Method 6020/ 7470/7471; (4) Calcium in accordance with USEPA Method 3050B/6020, (5) Chloride in accordance with USEPA Method 0300.0/9056, and (6) PCBs in accordance with USEPA Method 3550B/8082.

4.0 EVALUATION AND PRESENTATION OF RESULTS

4.1 SUBSURFACE CONDITIONS

4.1.1 Geologic Setting

4.1.1.1 Soil Conditions based on Published Material

According to the United States Department of Agriculture, *Soil Survey of Wayne County, Michigan*, the soil in the area is classified as the Pewamo-Blount-Metamora association. This

soil is described as “*nearly level to gently sloping, poorly drained to somewhat poorly drained soils that have a fine-textured to moderately fine-textured subsoil.*”

According to the Michigan Geological Survey Division’s publication, *Quaternary Geology of Southern Michigan*, soil in the area is lacustrine clay and silt. This soil is described as gray to dark reddish brown and is varved in some localities. The soil chiefly underlies extensive, flat, low-lying areas formerly inundated by glacial Great Lakes. Soil thickness ranges from 10 to 30 feet. Typically, lacustrine clay and silt are associated with low hydraulic permeability and restrict the movement of groundwater.

4.1.1.2 Soil Conditions based on Field Observations

During drilling activities, AKT Peerless encountered the following soil types:

- FILL from below the concrete to between approximately 1.5 feet to 4 feet below ground surface. The fill consisted of brown/black sand and gravel with masonry debris and clay found in some of the borings. In addition, a white, chalk-like substance was observed just below the concrete to a depth of 14 feet below ground surface.
- CLAY from the ground surface to approximately 20 feet below ground surface, the maximum depth explored. This clay was dry to moist, brown to grey in color, medium-stiff/stiff to soft, occasionally mottled.

Other than the fill material the geology encountered during this Phase II ESA is consistent with the geology described in the publications noted in Section 2.4. Soil boring logs are included as Appendix A.

4.1.2 Hydrogeologic Conditions

4.1.2.1 Anticipated Groundwater Flow Direction

Based on a review of the USGS Topographic Map entitled *Detroit, Michigan Quadrangle*, the subject property appears to decline gently to the south and rests at an elevation of approximately 579 feet above the National Geodetic Vertical Datum. Based on topographic contours, surface runoff at the subject property appears to flow to the south toward the Detroit River. Refer to Figure 1 for a topographic site location map.

Typically, the water table aquifer flows toward a major drainage feature or in the same direction as the drainage basin. The Detroit River, which flows southwest, is located approximately 600 feet south of the subject property. Therefore, AKT Peerless infers that groundwater beneath the subject property flows to the south, with potential influence from the Detroit River.

4.1.2.2 Groundwater Conditions based on Field Observations

During drilling activities, AKT Peerless did not encounter groundwater in any of the soil boring locations.

4.2 MDEQ RELEVANT EXPOSURE PATHWAYS AND APPLICABLE CRITERIA

4.2.1 Relevant Exposure Pathways

As defined in Michigan Public Act 451 Part 201, “relevant pathway” means an exposure pathway that is reasonable and relevant because there is a reasonable potential for exposure to a hazardous substance. The analysis of potential exposure pathways is based on existing conditions at the subject property. The following subsections identify the relevant exposure pathways based on the subject property conditions observed.

4.2.1.1 Ingestion of Groundwater Pathway

Groundwater was not encountered in any of the soil borings drilled at the subject property. Therefore, ingestion of groundwater at the subject property is not a relevant exposure pathway.

4.2.1.2 Groundwater Venting to Surface Water Pathway

Groundwater Venting to Surface Water is not a human exposure pathway, but rather an exposure pathway based on aquatic toxicity. The subject property is located near the Detroit River. However, AKT Peerless did not encounter any groundwater at the subject property. Therefore, venting to surface water is not a relevant exposure pathway.

4.2.1.3 Groundwater Contact Pathway

Groundwater was not encountered in any of the soil borings drilled at the subject property. Therefore, groundwater contact is not a relevant exposure pathway.

4.2.1.4 Volatilization to Indoor Air Inhalation Pathway

Volatilization to Indoor Air Inhalation is a relevant exposure pathway.

4.2.1.5 Volatilization to Ambient Air Pathway

Volatilization to Ambient Air is a relevant exposure pathway.

4.2.1.6 Particulate Inhalation Pathway

Particulate Inhalation is a relevant exposure pathway.

4.2.1.7 Direct Contact Pathway

Direct Contact is a relevant exposure pathway.

4.2.2 Applicable Criteria

Applicable criterion means a cleanup criterion for a relevant pathway. A criterion is not applicable if the exposure pathway is not relevant. Based on the exposure pathway evaluation, the applicable pathways at the subject property include:

- Soil Volatilization to Indoor Air Inhalation (SVIAI)/Groundwater Volatilization to Indoor Air Inhalation (GVIAI);

- Infinite Source Volatile Soil Inhalation (VSIC);
- Particulate Soil Inhalation (PSI), and;
- Soil Direct Contact (DC)/Groundwater Contact (GC).

AKT Peerless compared the laboratory analytical data to the applicable Part 201 Residential Generic Cleanup Criteria (GCC) as published by the MDEQ-RRD.

4.3 LABORATORY ANALYTICAL RESULTS

4.3.1 Soil Analytical Results

The results of the laboratory analyses of the soil samples are summarized in the table below:

Summary of Soil Analytical Results

Soil Boring Location & Depth	Parameter	DWP	GSIP	GC	SVIAI	VSIC	PSI	DC
B-1 (0.5-1)	Arsenic	☑	-	-	-	-	-	-
	Chromium	-	☑	-	-	-	-	-
	Mercury	-	☑	-	-	-	-	-
B-2B (0.5-1)	Trichloroethylene	☑	-	-	-	-	-	-
	Chromium	-	☑	-	-	-	-	-
B-2 (3-5)	Trichloroethylene	☑	-	-	-	-	-	-
	Vinyl Chloride	☑	-	-	-	-	-	-
B-3 (3-5)	Chromium	-	☑	-	-	-	-	-
	Selenium	-	☑	-	-	-	-	-
	Mercury	-	☑	-	-	-	-	-
B-3 (6-8)	Vinyl Chloride	☑	-	-	-	-	-	-
B-4 (0.5-1)	Trichloroethylene	☑	-	-	-	-	-	-
	Chromium	-	☑	-	-	-	-	-
	Mercury	-	☑	-	-	-	-	-
B-4 (3-5)	Trichloroethylene	☑	-	-	-	-	-	-
B-5 (0.5-1)	Arsenic	☑	-	-	-	-	-	-
	Chromium	-	☑	-	-	-	-	-
	Selenium	-	☑	-	-	-	-	-
	Silver	-	☑	-	-	-	-	-
	Mercury	-	☑	-	-	-	-	-

Soil Boring Location & Depth	Parameter	DWP	GSIP	GC	SVIAI	VSIC	PSI	DC
B-6 (0.5-1)	Arsenic	<input checked="" type="checkbox"/>	-	-	-	-	-	-
	Chromium	-	<input checked="" type="checkbox"/>	-	-	-	-	-
	Silver	-	<input checked="" type="checkbox"/>	-	-	-	-	-
	Mercury	-	<input checked="" type="checkbox"/>	-	-	-	-	-
B-7 (0.5-1)	Trichloroethylene	<input checked="" type="checkbox"/>	-	-	-	-	-	-
	Chromium	-	<input checked="" type="checkbox"/>	-	-	-	-	-
	Selenium	-	<input checked="" type="checkbox"/>	-	-	-	-	-
	Mercury	-	<input checked="" type="checkbox"/>	-	-	-	-	-
B-7 (3-5)	Trichloroethylene	<input checked="" type="checkbox"/>	-	-	-	-	-	-
B-8 (4-6)	Arsenic	<input checked="" type="checkbox"/>	-	-	-	-	-	-
	Chromium	-	<input checked="" type="checkbox"/>	-	-	-	-	-
	Mercury	-	<input checked="" type="checkbox"/>	-	-	-	-	-
B-9 (1-1.5)	Arsenic	<input checked="" type="checkbox"/>	-	-	-	-	-	-
	Chromium	-	<input checked="" type="checkbox"/>	-	-	-	-	-
B-9 (12-14)	Chloride	-	-	-	-	-	-	<input checked="" type="checkbox"/>
B-10 (1-1.5)	Arsenic	<input checked="" type="checkbox"/>	-	-	-	-	-	-
	Chromium	-	<input checked="" type="checkbox"/>	-	-	-	-	-
	Selenium	-	<input checked="" type="checkbox"/>	-	-	-	-	-
	Mercury	-	<input checked="" type="checkbox"/>	-	-	-	-	-
B-11 (0.5-1)	Benzo(a)anthracene	-	-	-	-	-	-	<input checked="" type="checkbox"/>
	Benzo(a)pyrene	-	-	-	-	-	-	<input checked="" type="checkbox"/>
	Dibenzo(a,h)anthracene	-	-	-	-	-	-	<input checked="" type="checkbox"/>
	Floranthene	-	<input checked="" type="checkbox"/>	-	-	-	-	-
	Phenanthrene	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	-	-	-	-	-
	Arsenic	<input checked="" type="checkbox"/>	-	-	-	-	-	-
	Chromium	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	-	-	-	-	-
	Lead	<input checked="" type="checkbox"/>	-	-	-	-	-	<input checked="" type="checkbox"/>
	Silver	-	<input checked="" type="checkbox"/>	-	-	-	-	-
	Mercury	-	<input checked="" type="checkbox"/>	-	-	-	-	-
B-11 (1-2)	Acenaphthene	-	<input checked="" type="checkbox"/>	-	-	-	-	-
	Benzo(a)anthracene	-	-	-	-	-	-	<input checked="" type="checkbox"/>

Soil Boring Location & Depth	Parameter	DWP	GSIP	GC	SVIAI	VSIC	PSI	DC
	Benzo(a)pyrene	-	-	-	-	-	-	<input checked="" type="checkbox"/>
	Benzo(b)fluoranthene	-	-	-	-	-	-	<input checked="" type="checkbox"/>
	Dibenzo(a,h)anthracene	-	-	-	-	-	-	<input checked="" type="checkbox"/>
	Floranthene	-	<input checked="" type="checkbox"/>	-	-	-	-	-
	Flourene	-	<input checked="" type="checkbox"/>	-	-	-	-	-
	Indeno(1,2,3-cd)pyrene	-	-	-	-	-	-	<input checked="" type="checkbox"/>
	Phenanthrene	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	-	-	-	-	-
	Arsenic	<input checked="" type="checkbox"/>	-	-	-	-	-	-
	Chromium	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	-	-	-	-	-
	Silver	-	<input checked="" type="checkbox"/>	-	-	-	-	-
	Mercury	-	<input checked="" type="checkbox"/>	-	-	-	-	-
B-12 (2-4)	Arsenic	<input checked="" type="checkbox"/>	-	-	-	-	-	-
	Chromium	-	<input checked="" type="checkbox"/>	-	-	-	-	-
	Selenium	-	<input checked="" type="checkbox"/>	-	-	-	-	-
	Silver	-	<input checked="" type="checkbox"/>	-	-	-	-	-
	Zinc	<input checked="" type="checkbox"/>	-	-	-	-	-	-
	Mercury	-	<input checked="" type="checkbox"/>	-	-	-	-	-
B-13 (0-0.5)	Benzo(a)pyrene	-	-	-	-	-	-	<input checked="" type="checkbox"/>
	Floranthene	-	<input checked="" type="checkbox"/>	-	-	-	-	-
	Arsenic	<input checked="" type="checkbox"/>	-	-	-	-	-	-
	Chromium	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	-	-	-	-	-
	Selenium	-	<input checked="" type="checkbox"/>	-	-	-	-	-
	Silver	-	<input checked="" type="checkbox"/>	-	-	-	-	-
	Mercury	-	<input checked="" type="checkbox"/>	-	-	-	-	-
B-14 (0-0.5)	Tetrachloroethylene	<input checked="" type="checkbox"/>	-	-	-	-	-	-
	Arsenic	<input checked="" type="checkbox"/>	-	-	-	-	-	<input checked="" type="checkbox"/>
	Chromium	-	<input checked="" type="checkbox"/>	-	-	-	-	-
	Copper	<input checked="" type="checkbox"/>	-	-	-	-	-	-
	Lead	-	-	-	-	-	-	<input checked="" type="checkbox"/>
	Silver	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	-	-	-	-	-
	Mercury	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	-	-	-	-	-

Soil Boring Location & Depth	Parameter	DWP	GSIP	GC	SVIAI	VSIC	PSI	DC
B-14 (3-5)	Chromium	-	☑	-	-	-	-	-
	Mercury	-	☑	-	-	-	-	-
B-14 (6-8)	Chromium	-	☑	-	-	-	-	-
	Selenium	-	☑	-	-	-	-	-
	Silver	-	☑	-	-	-	-	-
	Mercury	-	☑	-	-	-	-	-
B-15 (3-5)	Chromium	-	☑	-	-	-	-	-
	Mercury	-	☑	-	-	-	-	-

Laboratory analytical results indicated that concentrations of PNAs, were detected in soil samples (B-11, B-13, and B-14) above applicable MDEQ GRCC. Concentrations of arsenic and lead were detected in B-14 (0-0.5) above applicable MDEQ GRCC. In addition, concentrations of chloride were detected in B-9 (12-14) above applicable MDEQ GRCC.

Refer to figure 3 for a site map with soil analytical results exceeding applicable MDEQ GRCC. Refer to Table 1 for a summary of soil analytical results. Refer to Appendix C for a complete analytical laboratory report.

4.3.2 Groundwater Analytical Results

AKT Peerless did not encounter groundwater during the Phase II activities.

4.3.3 Wipe Sample Analytical Results

AKT Peerless submitted three wipe samples for laboratory analysis of PCBs. Laboratory analytical results indicated that PCBs were not detected. Refer to Table 2 for a summary of PCB wipe analytical results. Refer to Appendix B for a complete analytical laboratory report.

5.0 SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

5.1 SUMMARY OF ENVIRONMENTAL CONCERNS

Based on previous environmental reports and AKT Peerless' July 2007, Phase I ESA, the following environmental concerns were identified:

- Historical use and "open" LUST
- Former USTs located on the eastern adjoining property
- Interior staining
- Staining and abandoned container
- Former railroad tracks
- Underground pipeline

- Historical use by DTE Energy
- Fill material on unpaved surfaces
- Potential machine pits
- Former material storage
- Suspicious pipe on eastern adjoining property
- Irregular soil mounds
- Vent stack and ash
- Adjoining properties

5.2 SUMMARY OF SUBSURFACE INVESTIGATION

On November 11, 2007, AKT Peerless conducted a subsurface investigation at the subject property to address the environmental concerns identified during previous environmental investigations. AKT Peerless (1) drilled 15 soil borings and (2) collected soil and wipe samples for laboratory analyses. AKT Peerless submitted soil samples for laboratory analyses of select parameters, including: VOCs, SVOCs, PNAs, Michigan metals, chloride, calcium, and PCBs.

5.3 CONCLUSIONS

The laboratory analytical results from soil samples collected at the property indicate that concentrations of benzo(a)pyrene, benzo(a)anthracene, benzo(b)fluoranthene, dibenzo(a,h)anthracene, indeno(1,2,3-cd)pyrene, chloride, arsenic and lead exceeded MDEQ Tier I Residential Soil Direct Contact RBSL. During a previous investigation conducted by MDEQ in September 2004, SVOCs and metals were detected at concentrations above current MDEQ Tier I Residential Direct Contact Criteria.

The laboratory analytical results from wipe samples collected at the property indicate that PCBs were not detected in any of the samples submitted.

Based on laboratory analytical results, the subject property meets the definition of a “facility”, as defined in Part 201 of Natural Resources and Environmental Protection Act (NREPA), Michigan Public Act (PA) 451, 1994, as amended.

5.4 RECOMMENDATIONS

The subject property meets the definition of a “facility”. AKT Peerless recommends that, prior to transfer of the property to a new owner/operator, the new owner/operator should complete a Baseline Environmental Assessment (BEA). The BEA provides new purchaser’s liability for existing contamination under Part 201 of Michigan’s Natural Resources and Environmental Protection Act, 1994 PA 451 as amended (Part 201). In addition, AKT Peerless recommends a hazardous material survey (including characterization and removal of abandoned containers identified during the Phase I ESA, evaluation of building material for the presence of asbestos and lead-based paint).

Furthermore, AKT Peerless further recommends preparation of a Section 7a Compliance Analysis or “Due Care” Plan for the subject property. Additional investigation will be necessary to define the extent of contamination identified at the subject property. Due care obligations under Part 201 include:

1. Undertake measures as are necessary to prevent exacerbation of the existing contamination.
2. Exercise due care by undertaking response activity necessary to mitigate unacceptable exposure to hazardous substances, mitigate fire and explosion hazards due to hazardous substances, and allow for the intended use of the *facility* in a manner that protects the public health and safety.
3. Take reasonable precautions against the reasonably foreseeable acts of omissions of a third party and the consequences that foreseeably could result from those acts or omissions.

6.0 LIMITATIONS

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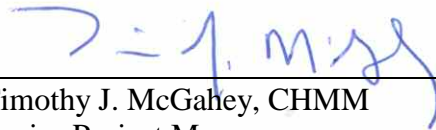
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FIGURES

TABLES

Appendix A
Soil Boring Logs

Appendix B
Laboratory Analytical Report

Appendix C
Geophysical Survey